

# NOTHING WORKS LIKE THE EARTH MACHINE.



WHEN  
GARDEN  
E

**EXTRA  
FEATURES MAKE  
THE DIFFERENCE.**

**RICH  
CLEAN  
EARTH  
OUT.**

The Earth Machine is made of a tough  
polyethylene which is resistant to ultraviolet light  
and makes use of recycled materials (post  
consumer waste).

The twist locked system prevents animals  
from getting in, or wind blowing the lid off.  
The vents are large to allow air circulation, but are  
small enough to be rodent resistant. The sliding  
door can be secured to prevent access by animals.  
No special tools required.

- ✓ The twist top lid allows you to control ventilation.
- ✓ The composter is fastened to the ground by using  
twist pegs which prevent the unit being overturned  
by animals or being blown over by heavy winds.
- ✓ The waste is transformed into rich humus within a  
few months.
- ✓ Round design allows the whole composter to be  
turned, to access compost from any direction.
- ✓ No digging involved.

**POWER TO IMPROVE YOUR WORLD.**

THE EARTH MACHINE  
IN PLASTICS



**In the U.S.A.**  
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BUFFALO, NEW YORK 14207

**In Canada**  
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Printed on  
recycled paper

# THE EARTH MACHINE IS HERE.



**21ST CENTURY  
HOME  
COMPOSTING**



# 21ST CENTURY COMPOSTING.

## THE EARTH NEEDS OUR HELP. ARE YOU READY TO DO YOUR SHARE?

We all care, but what can any one of us do? Back yard composting is one area where we CAN make a difference. Leaves, grass, and table scraps represent 30% of the material going to landfills. The best home for this organic material may be in our own back yards.

## I WANT TO HELP, BUT I DON'T KNOW HOW.

It has been easy to put yard trimmings in a bag and let someone else deal with them. But our landfills are too full of valuable organic materials and our soils need some soil amendments. Earth Machine Composting is the easy way to recycle valuable organic nutrients. Let us help you start composting today!

## BE A PART OF THE SOLUTION

Earth Machine Composting is the clear choice of composting experts. We have designed a home composter that takes the worries and work out of home composting. You will recycle organic materials at home and have an enriching and rewarding experience. Earth Machine Composting converts leaves, grass, and table scraps into an abundant supply of garden humus.

## WHAT IS COMPOSTING?

Composting is a controlled process of natural conversion of organic materials by microorganisms into compost. Just as leaves decompose in the forest into rich topsoil, composting accelerates the decomposition process into a period of months, not years.

## WHAT IS HUMUS?

If you know the wonderful aroma of good rich earth and forest topsoil, then you already have an idea of what humus is. Humus is the stable form of compost, and is the organic ingredient that makes topsoil fertile. Organic matter starts out as leaves, grass, and table scraps; microorganisms convert it into compost, and the soil uses it as humus.

## WHAT IS AN EARTH MACHINE?

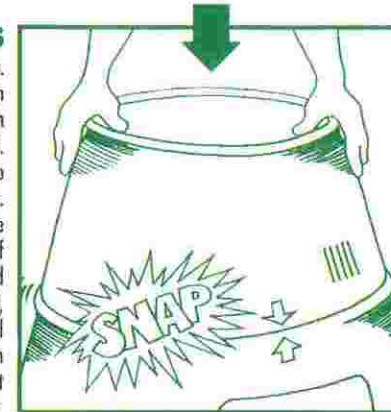
The Earth Machine is an advanced home composter that can convert household organics into humus in as little as 6 to 8 weeks. Earth Machine composting controls moisture, heat, and ventilation to ensure trouble free decomposition through our easy to follow instructions. You moisten, fill and mix; the Earth Machine does the rest. The Earth Machine has several features which make it superior to other home composters on the market.

- Efficient round design.
- A twist locking system on the lid.
- Vents which are large enough to allow air circulation, but are small enough to be rodent resistant.
- A sliding door which can be firmly secured.
- The twist top lid allows you to control ventilation.
- Strong twist pegs fasten the unit securely to the ground.

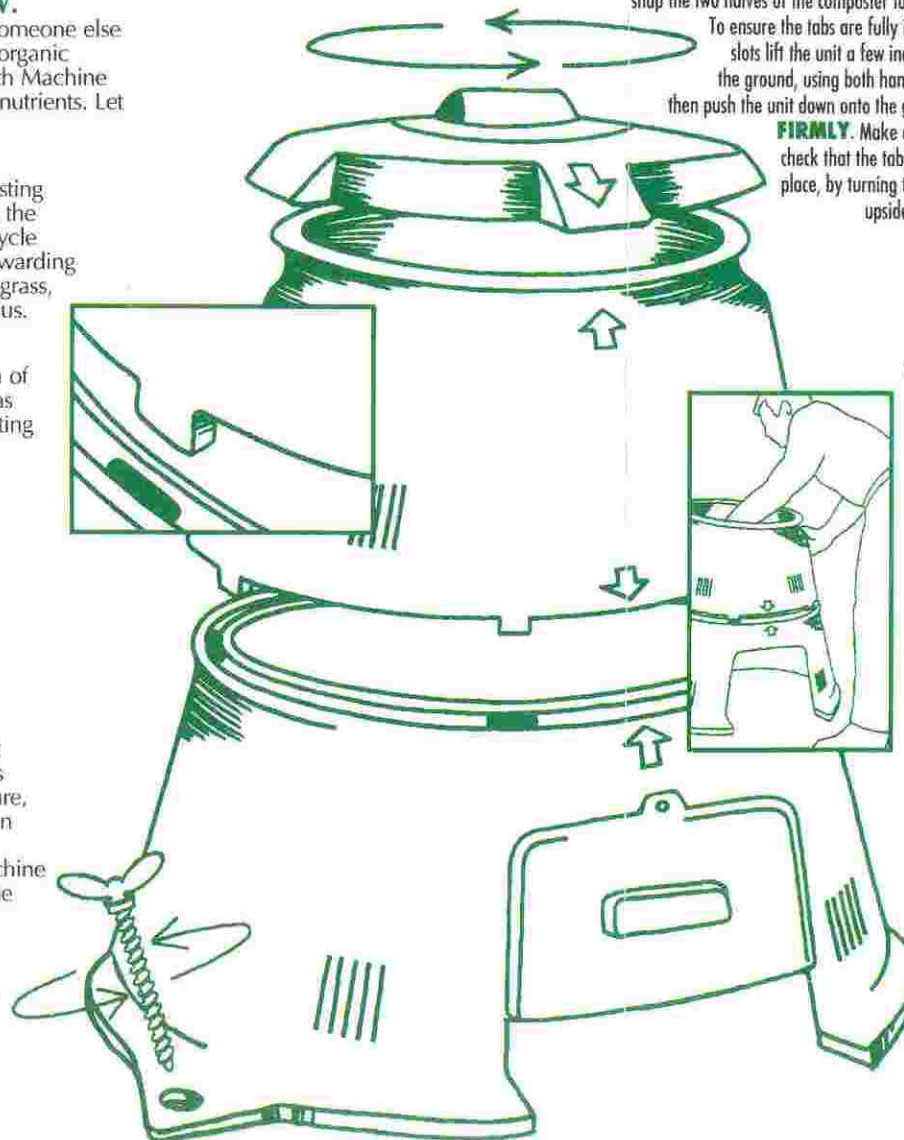
## IMPORTANT ASSEMBLY INSTRUCTIONS

1. Rotate the lid to OPEN and remove it.
2. Place the bottom half on the ground, line up the arrow on the top half with the arrow on the bottom half. Walk around the composter checking outside and inside to ensure that the 6 tabs are lined up with the appropriate slots in the groove on the top edge of the bottom half.
3. Once all 6 tabs are securely in the groove and lined up with the slots, **PUSH DOWN FIRMLY** to snap the two halves of the composter together.

To ensure the tabs are fully into the slots lift the unit a few inches off the ground, using both hands, and then push the unit down onto the ground, **FIRMLY**. Make a visual check that the tabs are in place, by turning the unit upside down.



4. SLIDE the door into position as shown fitting properly, using both hands bend the door to the correct shape. It may have gone slightly out of shape. Line up the arrow on the lid with the arrow on the composter. To lock the lid, simply rotate the lid to LOCKED. Ventilation can be controlled by lining up LO and HI with the arrow on the composter.
5. Choose a location convenient to your garden. Loosen up the soil (this helps earthworms get faster into the composter pile). With the unit in PLACE, screw the pegs through the slots on either side of the door. anchor the unit firmly to the ground. Be sure to use both sides of the door. It's that easy. THE EARTH MACHINE is ready to go.

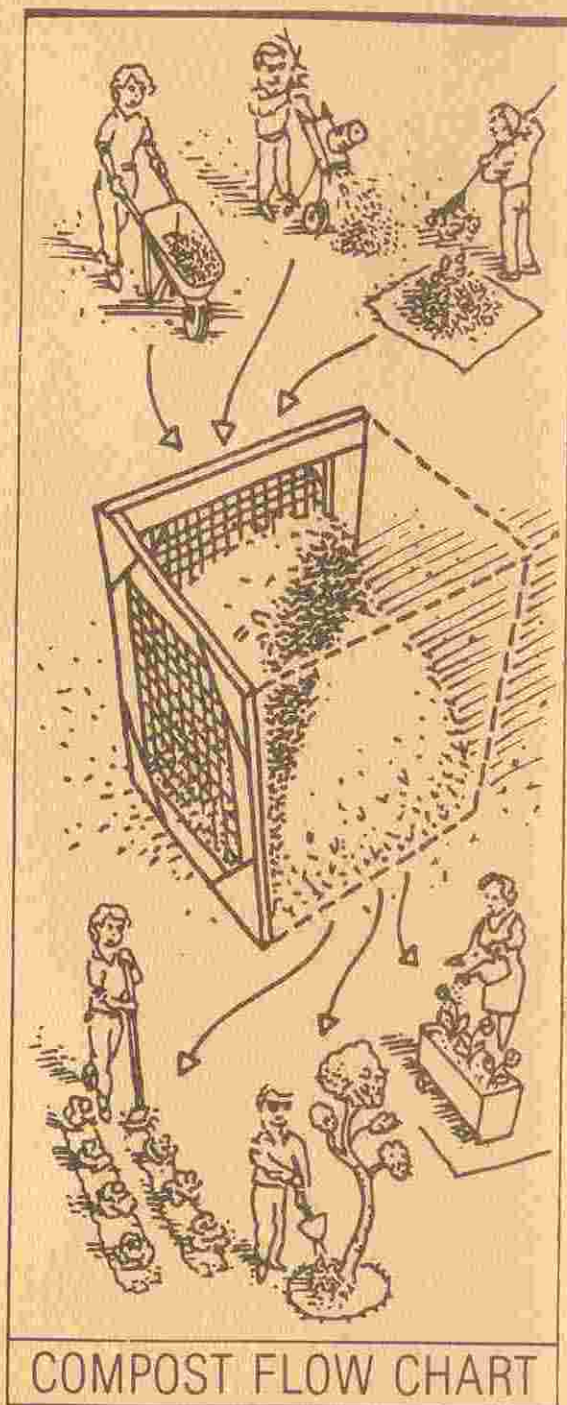


## STARTING UP THE EARTH MACHINE

Start with your available organic materials, leaves, grass, and table scraps. Mix the materials lightly and mix whatever you have together with some old compost, manure, leaf mould, compost starter, or rich loam soil if the others are not available.

- Add your daily kitchen scraps and garden trimmings
- Sprinkle each layer with compost and work it in
- The Earth Machine works best when the pile is moist. Weeds and trimmings should be shredded.
- Do not add thick layers of any kind of waste. Grass should not be more than 2 1/2" deep. Leaves should be shredded (Mulch or dry and crumble them). Mix grass with coarse material to help with compacting.
- The composter contents should be moist like a wrung out sponge. If the contents are too dry, it will take overly long to compost, and the contents may rot and smell. The lid of the Earth Machine is designed to control moisture. On high humidity days turn the lid to all the vents.
- On cool days, keep the vents closed to maintain the composting temperature.
- Mix the compost every couple of weeks or the time you add new material. This keeps the composting process going.
- Removing the finished compost is simple. For small quantities, open the door and take out the composted material. For large quantities, remove the entire cylinder, remove the top active uncomposted layer, remove composted material from the bottom, and put back the uncomposted layer, which you had





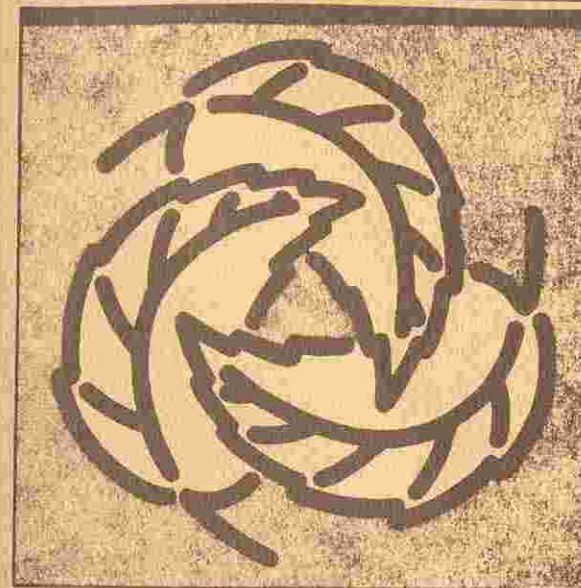
Yard waste is a prime candidate for recycling. It comprises approximately twenty percent of the residential waste stream and, on average, each household contributes six hundred pounds each year.

The goal of this publication is to actively encourage and assist in responsible home composting.

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Cape Cod Cooperative Extension  
Deeds and Probate Building  
Railroad Avenue  
Barnstable, MA 02630

# HOME COMPOSTING



## What Is Compost?

**C**ompost is a dark, crumbly and earthy-smelling form of decomposing organic matter.

## Why Should I Make Compost?

**C**omposting is the most practical and convenient way to handle your yard wastes. It can be easier and cheaper than bagging these wastes or taking them to the landfill or transfer station. Compost also improves your soil and the plants growing in it. If you have a garden, a lawn, trees, shrubs or even planter boxes, you have a use for compost.



By using compost you return organic matter to the soil in a useable form. Organic matter in the soil improves plant growth by helping break heavy clay soils into a better texture, by adding water and nutrient-holding capacity to sandy soils and by adding essential nutrients to any soil. Improving your soil is the first step toward improving the health of your plants. Healthy plants help clean our air and conserve our soil.

## What Can I Compost?

Anything that was once alive can be composted. Yard wastes, such as fallen leaves, grass clippings, weeds and the remains of garden plants, make excellent compost. Woody yard wastes can be clipped and sawed to a size useful for the wood stove or fireplace, or they can be run through a shredder for mulching and pathmaking. Used as a mulch or for paths, they will eventually decompose and become compost.

Care must be taken when composting kitchen scraps. Compost them only by the methods outlined in this brochure. Meat, bones and fatty foods (such as cheese, salad dressing and leftover cooking oil) should be put in the garbage.

## How Can I Use Compost?

Compost can be used to enrich the flower and vegetable garden, to improve the soil around trees and shrubs, as a soil amendment for houseplants and planter boxes and, when screened, as part of a seed-starting mix or lawn top dressing. Before they decompose, chipped woody wastes make excellent mulch or path material. After they decompose, these same woody wastes will add texture to garden soils.

# The Essentials of Composting

*With these principles in mind, everyone can make excellent use of their organic wastes.*



### Biology

The compost pile is really a teeming microbial farm. Bacteria start the process of decaying organic matter. They are the first to break down plant tissue and also the most numerous and effective composters. Fungi and protozoans soon join the bacteria and, somewhat later in the cycle, centipedes, millipedes, beetles and earthworms do their parts.



### Materials

Anything growing in your yard is potential food for these tiny decomposers. Carbon and nitrogen, from the cells of dead plants and dead microbes, fuel their activity. The microorganisms use the carbon in leaves or woodier wastes as an energy source. Nitrogen provides the microbes with the raw element of proteins to build their bodies.

Everything organic has a ratio of carbon to nitrogen (C:N) in its tissues, ranging from 500:1 for sawdust to 15:1 for table scraps. A C:N ratio of 30:1 is ideal for the activity of compost microbes. This balance can be achieved by mixing two parts grass clippings (which have a C:N ratio of 20:1) with one part fallen leaves (60:1) in your compost. Layering can be useful in arriving at these proportions, but a complete mixing of ingredients is preferable for the composting process. Other materials can also be used, such as weeds and garden wastes. Though the C:N ratio of 30:1 is ideal for a fast, hot compost, a higher ratio (i.e. 50:1) will be adequate for a slower compost.



### Surface Area

The more surface area the microorganisms have to work on, the faster the materials are decomposed. It's like a block of ice in the sun—slow

to melt when it's large, but melting very fast when broken into smaller pieces. Chopping your garden wastes with a shovel or machete, or running them through a shredding machine or lawnmower will speed their composting.



### Volume

A large compost pile will insulate itself and hold the heat of microbial activity. Its center will be warmer than its edges. Piles smaller than three feet cubed (27 cu.ft.) will have trouble holding this heat, while piles larger than five feet cubed (125 cu.ft.) don't allow enough air to reach the microbes at the center. These proportions are of importance only if your goal is a fast, hot compost.



### Moisture & Aeration

All life on Earth needs a certain amount of water and air to sustain itself. The microbes in the compost pile are no different. They function best when the compost materials are about as moist as a wrung-out sponge and are provided with many air passages. Extremes of sun or rain can adversely affect this moisture balance in your pile.



### Time & Temperature

The faster the composting, the hotter the pile. If you use materials with a proper C:N ratio, provide a large amount of surface area and a big enough volume and see that moisture and aeration are adequate, you will have a hot, fast compost (hot enough to burn your hand!) and will probably want to use the *turning unit* discussed in the next section. If you just want to deal with your yard wastes in an inexpensive, easy, nonpolluting way, the *holding unit* (also discussed in the next section) will serve you well.





## Mulching

Yard wastes can be used for weed control and water retention.

**Which wastes?** Woody yard wastes, leaves and grass clippings.

**How?** You can simply spread leaves or grass clippings beneath plantings. For woody materials up to 1" in diameter, rent or purchase a chipper/shredder. Tree services, if they are in your neighborhood, often will deliver wood chips free.

**Advantages and disadvantages:** All yard wastes will work first as a mulch and then, as decomposition proceeds, as a soil enrichment. A disadvantage of mulching with woody yard wastes is that you may have to buy or rent power equipment or make arrangements with a tree service.

**Variations:** Use chipped materials for informal garden paths.

## Composting Food Wastes



## Soil Incorporation

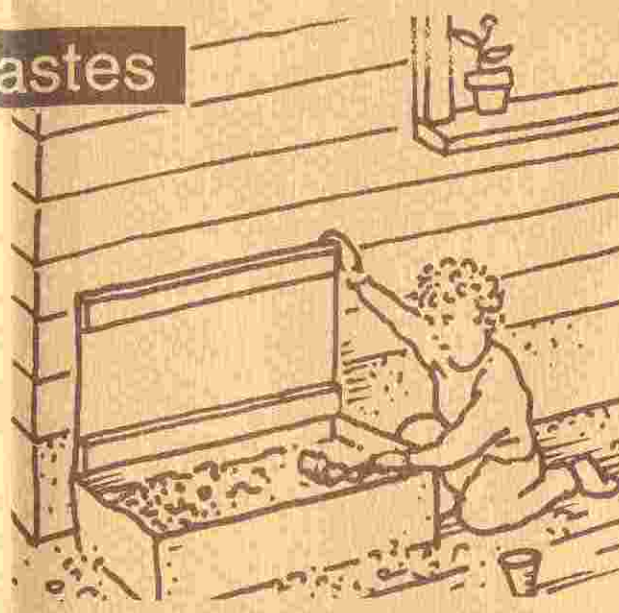
Burying your organic wastes is the simplest method of composting.

**Which wastes?** Kitchen scraps without meat, bones or fatty foods.

**How?** Everything should be buried at least 8 inches below the surface. Holes can be filled and covered, becoming usable garden space the following season.

**Advantages and disadvantages:** This is a simple method but, because of the absence of air, some nutrients will be lost. Rodents and dogs can become a problem with wastes buried less than 6 inches deep.

**Variations:** Using a posthole digger, wastes can be incorporated into the soil near the drip line of trees or shrubs and in small garden spaces.



## Earthworm Compost

Feeding earthworms in wooden bins is a good way to make high-quality compost from food scraps.

**Which wastes?** Kitchen scraps without meat, bones or fatty foods.

**How?** Fill a bin with moistened bedding such as peat moss for the worms. Rotate the burying of food wastes throughout the worm bin. Every three to six months the worm population should be divided and moved to fresh bedding.

**Advantages and disadvantages:** This is an efficient way to convert food wastes into high-quality soil for house plants, seedling transplants or general garden use. The worms themselves are a useful product for fishing. However, worm composting is more expensive and complicated than soil incorporation for dealing with food wastes.

**Variations:** A stationary outdoor bin can be used in all but the coldest months, or a portable indoor/outdoor bin can be used year-round.

### FOR MORE INFORMATION CONTACT:

Cape Cod Cooperative Extension

Deeds and Probate Building

Barnstable, Massachusetts 02630

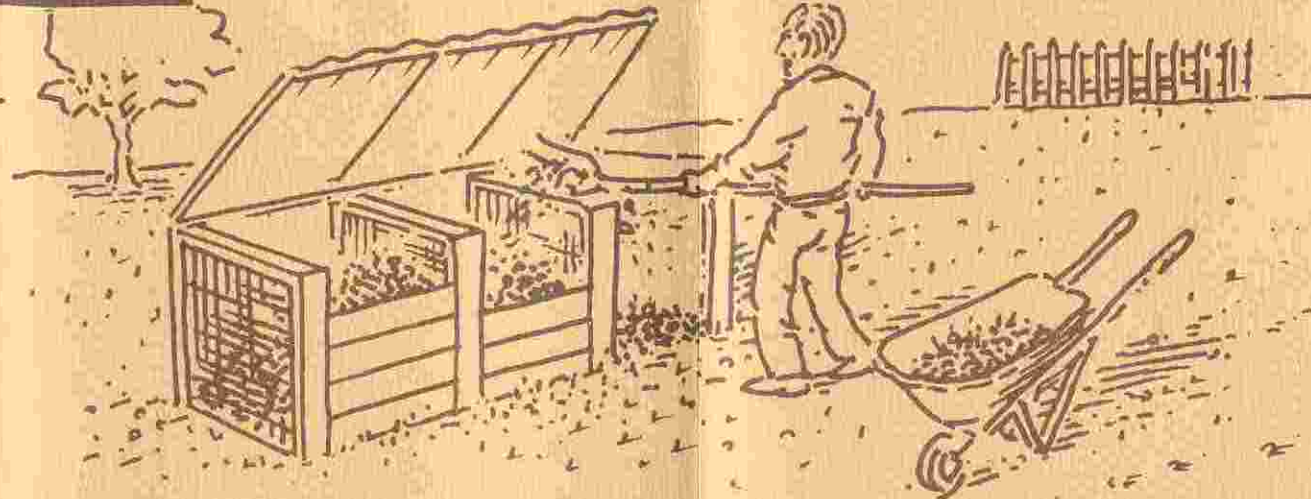
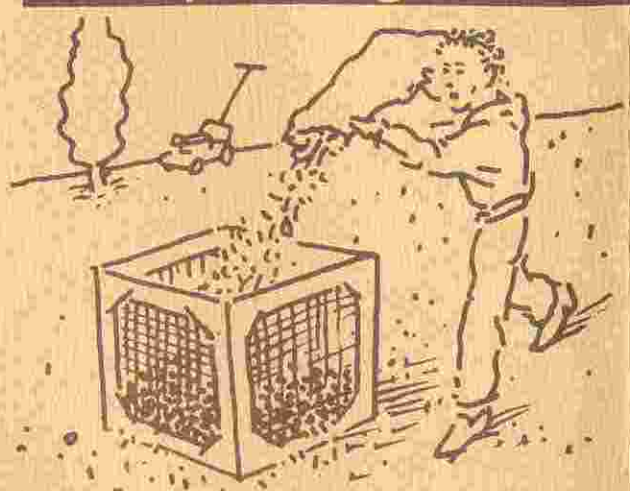
508-375-6690 - 8:00 A.M. to 4:30 P.M.

**EDUCATIONAL PROGRAMS ARE AVAILABLE**

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# Composting Yard Wastes



## Holding Units

These simple containers for yard wastes are the least labor and time-consuming way to compost.

**Which wastes?** Nonwoody yard wastes are the most appropriate.

**How?** Place the holding unit where it is most convenient. As weeds, grass clippings, leaves and harvest remains from garden plants are collected, they can be dropped into the unit. Chopping or shredding wastes, alternating high-carbon and high-nitrogen materials and keeping good moisture and aeration will all speed the process.

**Advantages and disadvantages:** For yard wastes this is the simplest method. The units can be portable, moving to wherever needed in the garden. This method can take from six months to two years to compost organic materials, so you only need to be patient.

**Variations:** Holding units can be made of circles of hardware cloth, old wooden pallets or wood and wire. Sod can also be composted with or without a holding unit by turning sections of it over, making sure there is adequate moisture and covering it with black plastic.

## Turning Units

This is a series of three or more bins that allows wastes to be turned on a regular schedule. Turning units are most appropriate for gardeners with a large volume of yard waste and the desire to make a high-quality compost.

**Which wastes?** Nonwoody yard wastes are appropriate. Kitchen wastes without meat, bones or fatty foods can be added to the center of a pile if it is turned weekly and reaches high temperatures.

**How?** Alternate the layering of high-carbon and high-nitrogen materials to approximately a 30:1 ratio. These should be moistened to the damp sponge stage. The pile temperature should be checked regularly. When the heat decreases substantially, turn the pile into the next bin. Dampen the materials if they are not moist and add more high-nitrogen material if heating is not occurring. Then make a new pile in the original bin. Repeat the process each time the pile in the first bin cools. After two weeks in the third bin, the compost should be ready for garden use.

**Advantages and disadvantages:** This method produces a high-quality compost in a short time utilizing a substantial input of labor.

**Variations:** The unit can be built of wood, a combination of wood and wire, or concrete block. Another type of turning unit is the barrel composter, which tumbles the wastes for aeration.

The following troubleshooting chart is a guide to more efficient composting using a turning unit.

SYMPTOMS	PROBLEM	SOLUTION
The compost has a bad odor.	Not enough air.	Turn it.
The center of the pile is dry.	Not enough water.	Moisten materials while turning the pile.
The compost is damp & warm in the middle, but nowhere else.	Too small.	Collect more material & mix the old ingredients into a new pile.
The heap is damp and sweet-smelling but still will not heat up.	Lack of nitrogen.	Mix in a nitrogen source like fresh grass clippings, fresh manure, blood-meal or ammonium sulfate.